

AMENDMENTS TO THE CLAIMS

Claims 1-10 (Cancelled)

11. (Currently Amended) A valve timing adjusting device comprising:

a first rotor that integrally fixes: a housing having the bearing of a camshaft; a case internally having a plurality of shoes projecting therefrom and having hydraulic chambers formed between the shoes; and a cover covering the hydraulic chambers, and that rotates integrally with a crankshaft;

a second rotor that has a plurality of vanes each dividing the hydraulic chamber into an advanced-angle hydraulic chamber and a retarded-angle hydraulic chamber, can relatively rotate through a predetermined angle within the first rotor, and is integrally fixed with an intake or exhaust camshaft;

an engaging cavity provided in one of the first rotor and the second rotor; and

a lock pin that is housed in a housing hole provided in the other of the first rotor and the second rotor, and that is projected therefrom by the energizing force of an energizing means, thereby abutting on the wall of the engaging cavity from an oblique direction to give a relative rotating force to the first rotor and the second rotor,

wherein the housing hole of the lock pin is formed in the inner peripheral surface of the shoe of the first rotor that is opposite to the outer peripheral surface of the second rotor at an angle with the radial direction~~A valve timing adjusting device according to Claim 10, and further~~
wherein a work-guide surface intersected by the axis of the housing hole is provided in the surface in which the housing hole is to be machined, in the inner peripheral surface of the shoe of the first rotor opposite to the outer peripheral surface of the second rotor.

12. (Currently Amended) A valve timing adjusting device according to ~~Claim 8~~claim 11, wherein the tip of the lock pin abutting on the wall of the engaging cavity from an oblique direction is tapered such that the tip thereof is parallel to the wall of the engaging cavity.

13. (Currently Amended) A valve timing adjusting device according to ~~Claim 8~~claim 11, wherein the engaging cavity is given the shape of a groove.

14. (Currently Amended) A valve timing adjusting device according to ~~Claim 8~~claim 11, wherein the engaging cavity the wall of which abuts on the tip of the lock pin traveling parallel to the rotation axis from an oblique direction is created.

15. (New) A valve timing adjusting device comprising:

- a first rotor that integrally fixes:

- a housing having the bearing of a camshaft;

- a case internally having a plurality of shoes projecting therefrom and having hydraulic chambers formed between the shoes; and

- a cover covering the hydraulic chambers,

- wherein the first rotor rotates integrally with a crankshaft;

- a second rotor that has a plurality of vanes, each dividing the hydraulic chamber into an advanced-angle hydraulic chamber and a retarded-angle hydraulic chamber, can relatively rotate

through a predetermined angle within the first rotor, and is integrally fixed with an intake or exhaust camshaft;

an engaging cavity provided in one of the first rotor and the second rotor; and

a lock pin that is housed in a housing hole provided in the other of the first rotor and the second rotor, and that is projected therefrom by the energizing force of an energizing means, thereby abutting on the wall of the engaging cavity from an oblique direction to give a relative rotating force to the first rotor and the second rotor, wherein one side of the tip of the lock pin is formed in the shape of a first taper, such that the side having the first taper is parallel to the wall of the engaging cavity and further such that the first taper is different from any other taper on any other side of the lock pin.